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AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Cancelled)

2. (New) A method of winding a strip member on a drum of a tire building machine in a winding operation building a tire, comprising:

providing a first strip end sensor directed at said drum in a direction angularly displaced along a path of rotational advance of said drum from an angular position whereat said strip member is brought into initial contact with said drum in order to detect a first detection position on said drum whereat said strip member is brought into initial contact with said drum;

providing a second strip end sensor directed at said drum and angularly displaced from said first strip end sensor;

providing a an angle detector to detect an angle of rotation of said drum;

rotating said drum in a drum rotational direction while delivering a front end of said strip member to said drum to begin wrapping said strip member on said drum;

detecting said front end of said strip member at said first detection position using said first strip end sensor and initiating a first angular measurement using said angle detector;

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detecting arrival of said front end of said strip member at said second strip

end sensor;

completing said first angular measurement using said angle detector and

initiating a second angular measurement when said front end of said strip member

is detected by said second strip end sensor and continuing to rotate said drum in said

drum rotational direction;

calculating a first angle representing angular displacement from said second

strip end sensor to said first strip end senor in the drum rotational direction based on

output from said angle detector;

detecting arrival of a trailing end of said strip member at said first strip end

sensor brought about by rotating said drum in said drum rotational direction;

completing said second angular measurement using said angle detector when

said trailing end of said strip member is detected by said first strip end sensor to yield

a second angle; and

calculating an overlap length if said second angle is greater than said first

angle and calculating a gap length if said second angle is less than said first angle.

3. (New) The method of claim 2 wherein:

said overlap length is calculated using the formula

$$X=(D + 2t)\pi \times ((\theta_1 - \theta_0)/360)$$

when said second angle is greater than said first angle, where:

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$X=$ said gap length;

$D=$ a diameter of said drum;

$t=$ a thickness of said strip member;

$\theta_0=$ said first angle; and

$\theta_1=$ said second; and

said gap length is calculated using the formula

$$Y=(D + 2t)\pi \times ((\theta_0 - \theta_2)/360)$$

when said first angle is greater than said second angle and where θ_2 equals said second angle.

4. (New) The method of claim 3 further comprising:

determining whether one of said overlap length and said gap length is outside an allowable range; and

    stopping the winding operation of the tire in response to said one of said overlap length and said gap length being determined to be outside said allowable range.

5. (New) The method of claim 3 further comprising:

determining whether one of said overlap length and said gap length is outside an allowable range; and

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sounding an alarm in response to said one of said overlap length and said gap

length being determined to be outside said allowable range.

6. (New) The method of claim 2 further comprising:

determining whether one of said overlap length and said gap length is outside

an allowable range; and

stopping the winding operation of the tire in response to said one of said

overlap length and said gap length being determined to be outside said allowable

range.

7. (New) The method of claim 2 further comprising:

determining whether one of said overlap length and said gap length is outside

an allowable range; and

sounding an alarm in response to said one of said overlap length and said gap

length being determined to be outside said allowable range.

8. (New) A method of winding a strip member on a drum of a tire building

machine, comprising:

providing a first strip end sensor directed at a first detection position on said

drum whereat said strip member is brought into initial contact with said drum;

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providing a second strip end sensor directed at said drum and angularly displaced from said first strip end sensor;

providing a an angle detector to detect an angle of rotation of said drum;

rotating said drum in a drum rotational direction while delivering a front end of said strip member to said drum to begin wrapping said strip member on said drum;

detecting said front end of said strip member using said first strip end sensor and initiating a first angular measurement using said angle detector;

detecting arrival of said front end of said strip member at said second strip end sensor;

completing said first angular measurement using said angle detector and initiating a second angular measurement when said front end of said strip member is detected by said second strip end sensor and continuing to rotate said drum in said drum rotational direction;

calculating a first angle representing angular displacement from said second strip end sensor to said first strip end senor in the drum rotational direction based on output from said angle detector;

detecting arrival of a trailing end of said strip member at said first strip end sensor brought about by rotating said drum in said drum rotational direction;

completing said second angular measurement using said angle detector when said trailing end of said strip member is detected by said first strip end sensor to yield a second angle;

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calculating an overlap length if said second angle is greater than said first

angle and calculating a gap length if said second angle is less than said first angle;

determining whether one of said overlap length and said gap length is outside

an allowable range; and

sounding an alarm in response to said one of said overlap length and said gap

length being determined to be outside said allowable range.

9. (New) The method of claim 8 wherein:

said overlap length is calculated using the formula

$$X = (D + 2t)\pi \times ((\theta_1 - \theta_0)/360)$$

when said second angle is greater than said first angle, where:

X = said gap length;

D = a diameter of said drum;

t = a thickness of said strip member;

θ_0 = said first angle; and

θ_1 = said second; and

said gap length is calculated using the formula

$$Y = (D + 2t)\pi \times ((\theta_0 - \theta_2)/360)$$

when said first angle is greater than said second angle and where θ_2 equals said

second angle.

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10. (New) A method of winding a strip member on a drum of a tire building

machine, comprising:

providing a first strip end sensor directed at a first detection position on said

drum whereat said strip member is brought into initial contact with said drum;

providing a second strip end sensor directed at said drum and angularly

displaced from said first strip end sensor;

providing a an angle detector to detect an angle of rotation of said drum;

rotating said drum in a drum rotational direction while delivering a front end

of said strip member to said drum to begin wrapping said strip member on said drum;

detecting said front end of said strip member using said first strip end sensor

and initiating a first angular measurement using said angle detector:

detecting arrival of said front end of said strip member at said second strip

end sensor;

completing said first angular measurement using said angle detector and

initiating a second angular measurement when said front end of said strip member

is detected by said second strip end sensor and continuing to rotate said drum in said

drum rotational direction;

calculating a first angle representing angular displacement from said second

strip end sensor to said first strip end senor in the drum rotational direction based on

output from said angle detector;

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detecting arrival of a trailing end of said strip member at said first strip end

sensor brought about by rotating said drum in said drum rotational direction;

completing said second angular measurement using said angle detector when

said trailing end of said strip member is detected by said first strip end sensor to yield

a second angle;

calculating an overlap length if said second angle is greater than said first

angle and calculating a gap length if said second angle is less than said first angle;

determining whether one of said overlap length and said gap length is outside

an allowable range; and

stopping the winding operation of the tire in response to said one of said

overlap length and said gap length being determined to be outside said allowable

range.

11. (New) The method of claim 10 wherein:

said overlap length is calculated using the formula

$$X = (D + 2t)\pi \times ((\theta_1 - \theta_0)/360)$$

when said second angle is greater than said first angle, where:

X = said gap length;

D = a diameter of said drum;

t = a thickness of said strip member;

θ_0 = said first angle; and

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θ_1 = said second; and

said gap length is calculated using the formula

$$Y = (D + 2t)\pi \times ((\theta_0 - \theta_2)/360)$$

when said first angle is greater than said second angle and where θ_2 equals said

second angle.

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